

## A new species of *Eudarcia* subgenus *Abchagleris* and description of the hitherto unknown female of *E. (A.) sutteri* (Tineidae)

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**Summary.** A new *Eudarcia* species is described in the subgenus *Abchagleris* along with the hitherto unknown female of *E. (A.) sutteri* Gaedike, 1997. The new available material makes it possible to extend our knowledge on the biology of *Eudarcia* moths. A study of these two species brought out some more characters of the female genitalia to be synapomorphic for the subgenus *Abchagleris*.

**Zusammenfassung.** Es wird eine neue *Eudarcia*-Art in der Untergattung *Abchagleris* zusammen mit dem bisher unbekanntem Weibchen von *E. (A.) sutteri* Gaedike, 1997 beschrieben. Das Material ermöglicht es, einige Bemerkungen zur Biologie der Gattung zu machen. Die Untersuchung der Weibchen der beiden Arten erbrachte zusätzliche Merkmale der weiblichen Genitalien, die synapomorph für die Untergattung *Abchagleris* sein können.

**Résumé.** Une nouvelle espèce d'*Eudarcia* est décrite, appartenant au sous-genre *Abchagleris*, ainsi que la femelle, jusqu'à présent inconnue, de *E. (A.) sutteri* Gaedike, 1997. Le matériel additionnel à disposition actuellement permet d'approfondir nos connaissances sur la biologie du genre *Eudarcia*. L'étude de ces deux espèces a révélé quelques caractères synapomorphiques additionnels du sous-genre *Abchagleris*.

**Key words:** Lepidoptera, Tineidae, *Eudarcia*, *Abchagleris*, taxonomy, biology, new species, Crete, Rhodes, Greece.

Shortly after a publication of some remarks on the *Eudarcia* subgenus *Abchagleris* (Gaedike, 1997), along with an attempt to clarify the phylogenetic relationships in this subgenus, it became possible to put forward some additional information based on material from the Greek islands of Crete (Kríti) and Rhodes (Ródos) collected by the second author and G. Verkerk.

Besides of a new species and the hitherto unknown female of another (described below), this material is of certain importance since it also throws some further light on the biology of *Eudarcia* tineid moths.

The holotype and 6 paratypes of the new species are deposited in the collection of the Deutsches Entomologisches Institut, Eberswalde, the rest of the paratypes in the collections of H. Henderickx and G. Verkerk.

*Eudarcia (Abchagleris) verkerki* sp. n.

Holotype ♂ (with case and pupal skin), Crete, Mesavía, 700 m, case: 23.III.1997, imago: 19.VI.1997, G. Verkerk & H. Henderickx leg. 15 Paratypes (all cases from the same locality and with the same date): ♂, ♀ (with case and pupal skin), same label data as holotype; 2 ♂, 2 ♀, imago: 20.V.1997; ♂, 2 ♀, imago: 22.V.1997; ♀, imago: 26.V.1997; ♀ (with case and pupal skin), imago: 20.VI.1997; ♂ (with case and pupal skin), imago: 24.VI.1997; 3 ♀ (with case and pupal skin), imago: 2.VII.1997. Additionally, the cases and pupal skins collected on 20. and 22.V.1997 are on separate labels.

**Diagnosis** (fig. 1). Wingspan 5–8 mm; head yellowish brown, dark grey antennae nearly as long as the forewings, palpi of the same coloration as head, basal segment of maxillar palpi with a brush of long dark bristles; thorax and tegulae dark brownish-grey; forewing of the same coloration as thorax, mixed with a pale yellowish pattern: two broad bands, speckled with dark scales, from costa to posterior wing margin between 1/4 and 1/2, three short strips on the costa before the apex; cilia overlaid with dark scales; hindwings light grey.

**Male genitalia** (fig. 7, *a-c*). Tegumen without any special structures, with broad rounded upper edge, without developed uncus; a small thin process in the middle of the tegumen directed downwards, two small processes from the lateral edges to the middle; vinculum triangular with deep lateral incisions; corpus valvae nearly cubic, with long transtilla, costal arm long, convex, with rounded tip with many fine bristles, the lower edge of the corpus valvae folded, the tip with two strongly sclerotized short thorns, on the inner side of the corpus with approx. 10 long bristles, which often break off during preparation; aedeagus long, as long as tegumen+vinculum, curved, with a cornutus-like sclerotization and with one cornutus (a short thorn on a broad rounded base).

**Female genitalia** (fig. 7, *d*). Last abdominal segment strongly sclerotized; the strongest sclerotization around the ostium; ostium and almost entire ductus bursae with strong sclerotization; signum is a field with many very small scale-sized rounded bristles.

**Biology** (figs. 3, 5, 6). All cases were found in one locality, at the entrance and in the surroundings of a small cave, a crack in a porous rock near Mesavía (Crete, 700 m). The larvae fed on algae or lichens on some longitudinal markings on the wall with greenish appearance. It appeared that a small water source created a convenient humidity and microclimatic conditions, since outside of the cave the rocks were dry and eroded. It is not unlikely that such a small habitat causes a very restricted distribution if not a relict colony. The specimens were bred on parts of the original rock and pupated soon after picking up. Fig. 3 shows mating of the new species under natural conditions, fig. 5, *b* shows the female pupal skin, figs. 6, *a-c* show cases with pupal skins.

**Comparative notes.** The new species differs in the size of the valva and the tegumen from all other members of the subgenus (*glaseri* (Petersen, 1967); *armata* (Gaedike, 1984); *fasciata* (Staudinger, 1880); *montana* (Gaedike, 1984); *sutteri* Gaedike, 1997). The presence of bristles on the inner side of the corpus valvae is a synapomorphic character shared with *E. sutteri*. The autapomorphic character for separation of the new species from *sutteri* is the size of the valva and the long bristles on the inner side of it. Furthermore the two species differ in female genitalia characters (signum, ductus bursae sclerotization).

The new species is dedicated to Gijs Verkerk, to acknowledge his worthwhile contribution in collecting *Eudarcia*, especially the species described here, and exploring their habitats.

#### **A description of the female of *Eudarcia (Abchagleris) sutteri* Gaedike, 1997**

Material examined. 2 ♀, Rhodes, Apóllona, 600 m, mountain Profitis Ilías, case: 9.-11.V.1997, imago: 15.VI.1997, H. Henderickx & G. Verkerk leg.; ♀, same label data, imago: 4.VI.1997; ♀, Rhodes, Siána, 350 m, case: 10.V.1997, imago: 10.VI.1997, H. Henderickx & G. Verkerk leg.; ♀, Rhodes, Siána, 350 m, in a deep cleft, case: 10.V.1997, imago: 10.VI.1997, H. Henderickx & G. Verkerk leg.

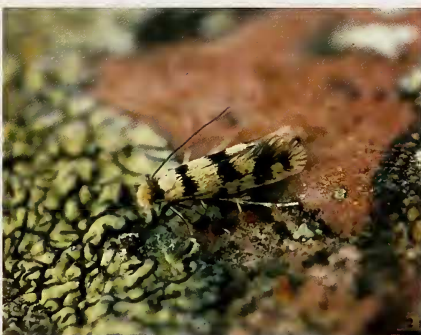
An examination of three female specimens (figs. 2, 4) of *Eudarcia* from Ródos, suggested them to belong to *E. (A.) sutteri* Gaedike, 1997, a species described on a series of males only.

Recently obtained material makes it possible to describe the female genitalia of this species (fig. 7, *e*): last abdominal segment

1



2



3

4

Fig. 1. *E. verkerki* sp. n. (Crete, Mesavía, case: 23.III.1997, imago: 19.VI.1997).

Fig. 2. *E. sutteri* (Rhodes, Apóllona, case 9.–11.V.1997, imago 15.VI.1997).

Fig. 3. *E. verkerki* sp. n., mating (Crete, Mesavía, 20.V.1997).

Fig. 4. *E. sutteri* (Rhodes, Apóllona, 4.VI.1997).

strongly sclerotized, ostium with a strongly sclerotized broad ring, which continues as a triangle-shaped sclerotization area in the ductus bursae; signum formed by about 6–8 rows of small sclerotized thorns.

Gijs Verkerk and the second author collected the larvae of this species on shaded humid rocks with mosses and lichens. The localities were situated at an elevation of between 300 and 600 m in a humid pine wood. The species was particularly abundant on the mountain Profitis Ilías near Apóllona, where most specimens were collected in a humid forest with a small river (figs. 5, b, 6, d, e).



Fig. 5. *Eudarcia*, pupal skin a — *E. sutteri* ♀, (Rhodes, Apóllona, case 9 –11.V.1997, imago: 15.VI.1997); b — *E. verkerki* sp. n. ♀, (Crete, Mesavía, case: 23.III.1997, imago: 20.VI.1997).

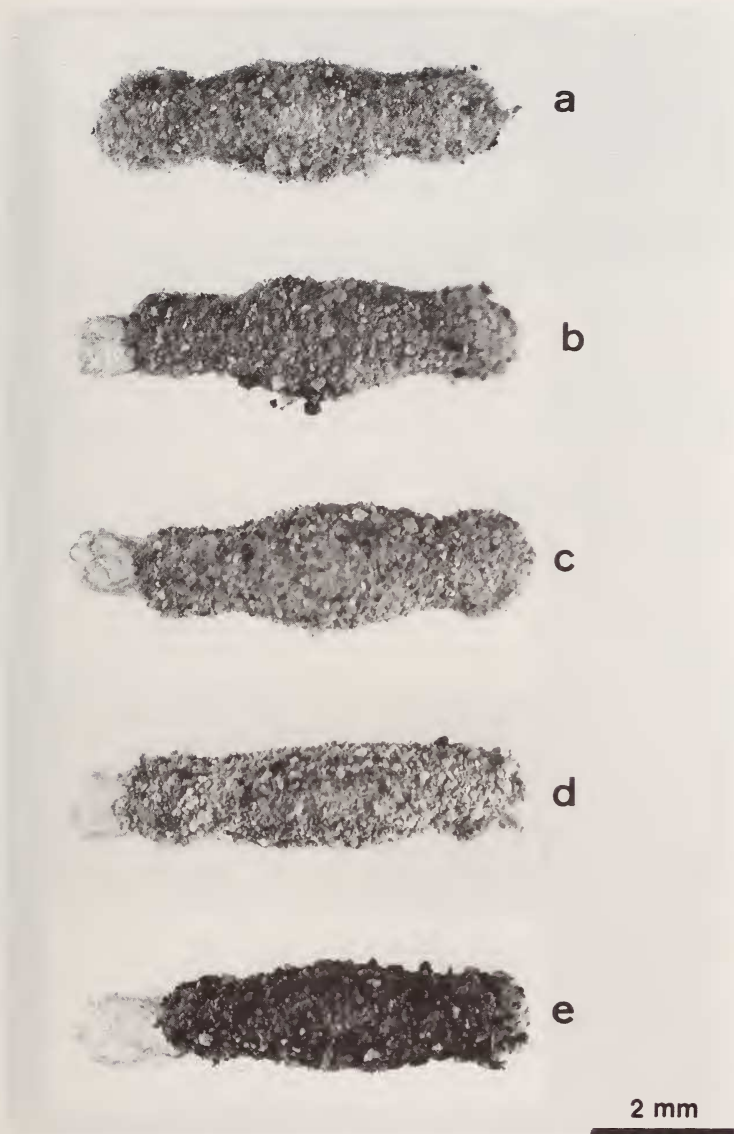


Fig. 6. *Eudarcia*, cases and pupal skin: *a* — *E. verkerki* sp. n. ♂, (Crete, Mesavía, case: 23.III.1997, imago: 20.VI.1997); *b* — *E. verkerki* sp. n., (Crete, Mesavía, case: 23.III.1997, imago: 20.VI.1997); *c* — *E. verkerki* sp. n. ♀, (Crete, Mesavía, case: 23.III.1997, imago: 20.VI.1997); *d* — *E. sutteri* ♀ (Rhodes, Siána, case: 10.V.1997, imago: 10.VI.1997); *e* — *E. sutteri* ♀ (Rhodes, Apóllona, case: 9 -11.V.1997, imago: 15.VI.1997) (*a-c* — cases with pupal skin, *d, e* — pupal skin).

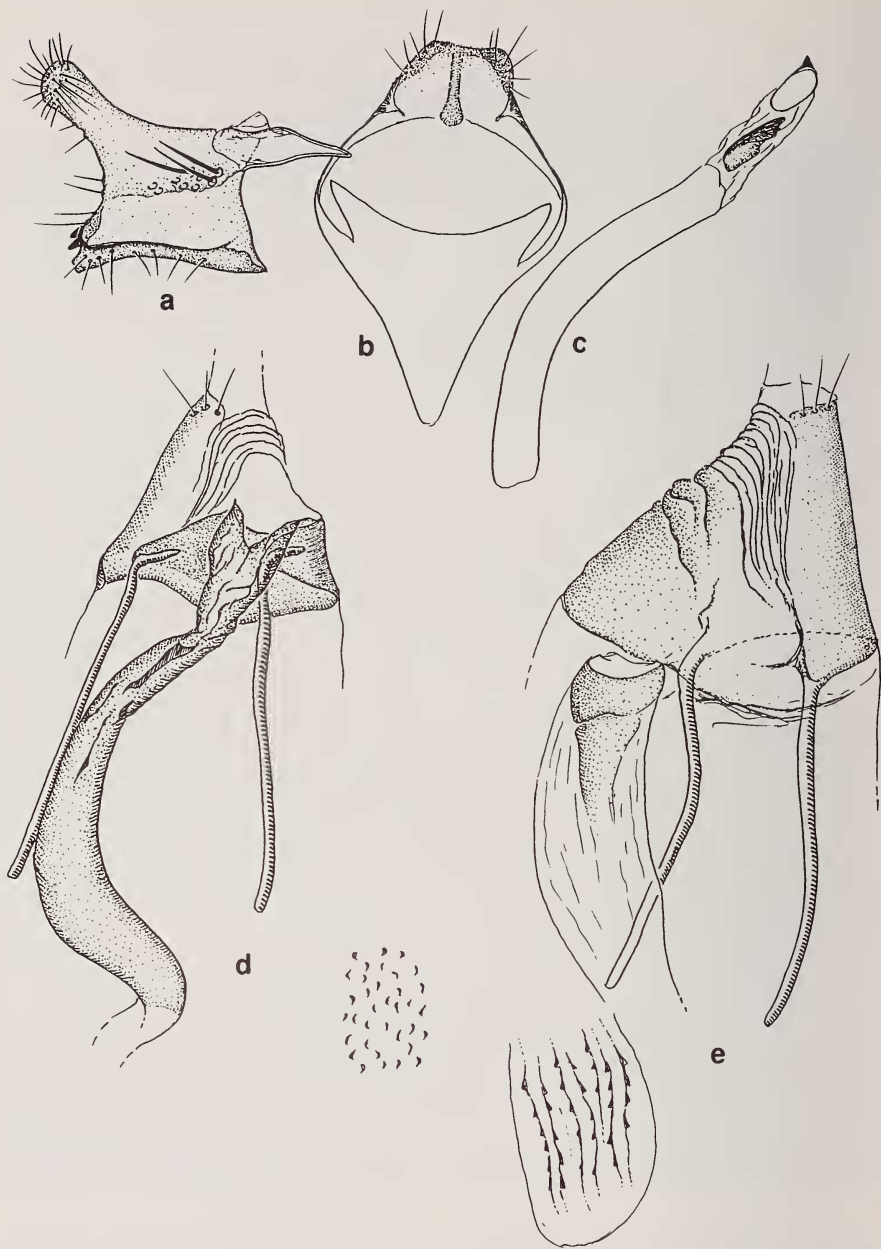


Fig. 7. *Eudarcia*, genitalia: *a-c* — *E. verkerki* sp. n., male genitalia: *a* — valva, *b* — uncus + tegumen + vinculum, *c* — aedeagus (Crete, Mesavia, imago: 20.VI.1997); *d* — *E. verkerki* sp. n., female genitalia (Crete, Mesavia, imago: 22.VI.1997); *e* — *E. sutteri*, female genitalia (Rhodes, Apollona, imago: 4.VII.1997).

Up to now, the females of three *Abchagleris* species were known. An examination of two out of the forementioned 5 female specimens makes it somewhat more confident to establish phylogenetically founded characters in the female genitalia for this subgenus. It seems that the stronger sclerotization of the last abdominal segment and the signum shape represent synapomorphic characters.

The illustrations on figs. 1–6 were made by the second author, the drawings (fig. 7) by the first author.

#### Reference

- GAEDIKE, R. 1997. Beitrag zur Kenntnis der paläarktischen Tineidae: Gattung *Eudarcia* Clemens, 1860. (Lepidoptera). — *Reichenbachia* 32(17): 99–103, 13 Abb.